

THE MERCK INDEX

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CHEMICALS, DRUGS, AND BIOLOGICALS

TWELFTH EDITION

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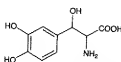
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Crystals from ethanol and ether, mp 232-235° (dec). $[\alpha]_D^{25}$ -39° ($c = 1$ in 1N aq HCl). Also cited as crystals from water and L-ascorbic acid, mp 229-232° (dec) (Ohashi). $[\alpha]_D^{25}$ -42.0° ($c = 1$ in 1N aq HCl).
THERAP CAT: Antiparkinsonian.

3514. DSIP. Delta sleep-inducing peptide (rabbit); delta sleep peptide; delta sleep factor. $C_{14}H_{21}NO_5$; mol wt 848.82. C 49.53%, H 5.70%, N 16.50%, O 28.27%. A nonapeptide that shows enhancement and induction of delta (slow-wave) and spindle EEG patterns. Its occurrence was suspected during dialysis of cerebral venous blood of rabbits during sleep induced by electrical stimulation of the thalamus: M. Monnier, L. Hösl, *Science* **146**, 796 (1964). Initial isoln: *idem*, *Pflügers Arch* **282**, 60 (1965). Isoln, characterization: G. A. Schoenenberger *et al.*, *Experientia* **28**, 919 (1972). Amino acid sequence, synthesis of DSIP and analogs: G. A. Schoenenberger, M. Monnier, *Proc. Nat. Acad. Sci. USA* **74**, 1282 (1977). Solid phase synthesis: Y. P. Shvachkin *et al.*, *Zh. Obshch. Khim.* **51**, 719 (1981). C.A. 95, 43644s (1981). Rapid liquid phase synthesis: S. Nozaki, I. Muramatsu, *Bull. Chem. Soc. Japan* **55**, 2165 (1982). HPLC separation: M. Dizaroglu *et al.*, *J. Chromatog.* **237**, 417 (1982). Effect on human sleep: D. Schneider-Helmert *et al.*, *Lancet* **1**, 1256 (1981); *idem*, *Int. J. Clin. Pharmacol. Ther. Toxicol.* **19**, 341 (1981); D. Schneider-Helmert, G. A. Schoenenberger, *Experientia* **37**, 913 (1981).

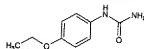
Tri-Ala-Gly-Gly-Asp-Ala-Ser-Gly-Glu

3515. DTBP. Bis(1,1-Dimethylethyl) peroxide; di-tert-butyl peroxide. $C_{10}H_{20}O_2$; mol wt 146.23. C 65.71%, H 12.41%, O 21.88%. $(CH_3)_2C(OOC(CH_3)_2)_2$. Flammable liq; d_4^{20} 0.7840; mp -40°; bp₂₄ 80°; n_D^{20} 1.3890. Flash pt (Tag open cup) 65°F (19°C). Soluble in organic solvents, in most resin monomers and in partial polymers. Soly in water about 0.01%.

USE: As polymerization catalysts.

3516. Dulcamara. Bittersweet; woody nightshade; scarlet berry. Dried stems of *Solanum dulcamara* L., Solanaceae. Habit: Europe, Western Asia, Northern Africa, natural in U.S. Constit: Solanidine (about 1%), dulcamarin, dulcamarin and dulcamarinic acids.

3517. Dulcin. (4-Ethoxyphenyl)urea; p-phenolcarbamide; p-phenylurea. Sucrol; Valzin. $C_{11}H_{13}N_2O_3$; mol wt 180.21. C 59.99%, H 6.71%, N 15.55%, O 17.76%. Made by treating p-phenetidine with phosgene and then with ammonia: Berlinerblau, *J. Prakt. Chem.* **30**, 102 (1883); from p-phenetidine and urea: Kurzer, *Org. Syn. coll. vol. IV*, 52 (1963).

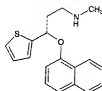


Lustrous needles; very sweet taste—about 250 times as sweet as cane sugar. mp 173-174°. Sol in 800 parts cold water, 50 parts boiling water, 25 parts alcohol.

USE: Non-nutritive sweetener.

3518. Duloxetine. (S)-N-Methyl-(1-naphthalenyl)oxy-2-thiophenopropanamine; (+)-(S)-N-methyl-(1-naphthalenyl)oxy-2-thiophenopropanamine; (+)-N-methyl-3-(1-naphthalenyl)oxy-2-thiophenopropanamine; LY-248686. $C_{18}H_{19}NOS$; mol wt 297.42. C 72.69%, H 6.44%, N 4.71%, O 5.38%, S 10.78%. Dual serotonin and norepinephrine uptake inhibitor. Prepn: D. W. Robertson *et al.*, *Eur. Pat. Appl.* 273,658; *idem*, *US Pat.* 5,023,269 (1988, 1991 both to Lilly); and affs. B.J. Deeter *et al.*, *Tetrahedron Lett.*

ters **31**, 7101 (1990). Improved process: R. A. Berglund, U.S. pat. 5,362,886 (1994 to Lilly). Pharmacology: D. T. Wong *et al.*, *Neuropsychopharmacology* **8**, 23 (1993). Neurochemical effects in vivo: R. W. Fuller *et al.*, *J. Pharmacol. Exp. Ther.* **269**, 132 (1994). Determin of chiral purity: E. C. Rickard, R. J. Bopp, *J. Chromatog. A* **680**, 605 (1994).



Hydrochloride, $C_{18}H_{19}NOS \cdot HCl$. White solid. pKa in DMF-water (66:34): 9.6.

THERAP CAT: Antidepressant.

3519. Durapatite. Hydroxylapatite; calcium phosphate hydroxide; calcium orthophosphate basic; hydroxyapatite; Alveograft; Ossopon; Periograf; $Ca_5(PO_4)_3Ca(OH)_2$ or $Ca_9(PO_4)_6(OH)_2$. Also considered as pentacalcium monohydroxyorthophosphate $Ca_5(OH)(PO_4)_3$. Calcd as $Ca_{10}H_{12}O_{16}P_6$: Ca 39.89%, H 0.20%, O 41.41%, P 18.50%. Occurs as a mineral in phosphate rock. Constitutes the mineral portion of bone. Prepn from $Ca(NO_3)_2$ and KH_2PO_4 : Warrington, *J. Chem. Soc.* **26**, 983 (1873); Rathje, *Ber.* **74**, 342 (1941); Hayek in *Handbook of Preparative Inorganic Chemistry*, G. Brauer, Ed. (Academic Press, 2nd ed., 1963) p 545; from calcium phosphate, dibasic: Perloff, Posner, *Inorg. Syn.* **6**, 16 (1960); from $Ca(NO_3)_2 \cdot 4H_2O$ and $(NH_4)_2PO_4$ plus NH_4OH : Hayek, *Newsl.* **7**, 63 (1963). Formation and structure of synthetic bone hydroxyapatites: A. S. Posner *et al.*, *Prog. Cryst. Growth Character.* **3**, 3 (1980).

Hexagonal needles arranged in rosettes. Dec above 1100°. Practically insol in water, even when freshly prep. Crystallographic data: a_0 9.425; c_0 6.935; c_0/a_0 0.736. USE: Prosthetic aid (artificial bone and teeth). THERAP CAT: Calcium supplement; phosphorus supplement.

3520. Durene. 1,2,4,5-Tetramethylbenzene; Durol; $C_{10}H_{14}$; mol wt 134.22. C 89.49%, H 10.51%. Occurs in coal tar. Usually prep'd from xylene and methyl chloride in the presence of $AlCl_3$: Smith, *Org. Syn.* vol. **18**, 32 (1930); cf. Smith, Dobrovolsky, *J. Am. Chem. Soc.* **48**, 1413 (1926).



Scales with camphor-like odor from alcohol. d_4^{20} 0.84, mp 80°, bp 191-193°. Sublimes and is volatile with steam. Insol in water; freely sol in alcohol, ether, benzene.

3521. Durohydroquinone. 2,3,5,6-Tetramethyl-1,4-benzenediol; tetramethyl-p-hydroquinone; duroquinone. $C_{14}H_{18}O_2$; mol wt 166.22. C 72.26%, H 8.49%, O 19.25%. For prepn see refs under Duroquinone.



Needles from alcohol. mp 233°. Begins to sinter at 220°. Sparingly sol in ether. Treatment with ferric chloride yields duroquinone.

Diacytyldurohydroquinone, needles from alc, mp 207°.

3522. Duroquinone. 2,3,5,6-Tetramethyl-2,5-cyclohexadiene-1,4-dione; tetramethyl-p-benzoquinone. $C_{14}H_{18}O_2$; mol wt 164.20. C 73.15%, H 7.37%, O 19.49%. Prepn by reduc-